

From the EPA Region 8 Quality Management Plan

(I'm not really sure this info is helpful, but it seemed appropriate to pass it along since our Region 8 QMP does have this section on conceptual site models.)

### **7.11 CONCEPTUAL MODELS (CONCEPTUAL SITE MODELS)**

EPA Orders CIO 2105.0 and 2106.0 require that before information or data are collected or used on Agency-funded or regulated environmental programs and projects, a systematic planning process must occur. EPA's systematic planning process is the DQO Process, described in Section 7.10, requires the use of a conceptual model, often referred as a conceptual site model (CSM). It is critical to carefully develop an accurate conceptual model of the environmental problem, as this model summarizes information that is currently known, how this relates to the project's goals, and serves as the basis for all subsequent inputs and decisions.

The conceptual model is typically a diagram that portrays the environmental conditions at your site and depicts known or potential:

- sources of contamination
- contaminants of concern
- movement of contamination through the environment
- media that are contaminated or may become contaminated
- exposure scenarios and human health or ecological receptors

The planning team will typically begin by developing a conceptual model of the problem, which summarizes the key environmental release, transport, dispersion, transformation, deposition, uptake, and behavioral aspects of the exposure scenario which underlies the problem. Additionally, the CSM may also present or be used to develop potential benchmarks or action levels for the program or project. The conceptual model is an important tool for organizing information about the current state of knowledge and understanding of the problem, as well as for documenting key theoretical assumptions underlying an exposure assessment.

It is important to identify theories and assumptions underlying the conceptual model to ensure adequate transparency. If the problem is complex, the team may consider breaking it into more manageable pieces, which might be addressed by separate studies. Priorities may be assigned to individual segments of the problem and the relationship between the segments examined. Errors in the development of the conceptual model will be perpetuated throughout the other steps of the DQO Process and are likely to result in developing a QAPP or study that may not achieve the data required to address the relevant issues.

The DPM is responsible for ensuring that the DQO Process (or functionally equivalent systematic planning process), including development of a conceptual model, is applied and documented whenever environmental data are collected or used. Tools for developing a CSM are available on the Region 8 QA Program website: ([ HYPERLINK "<http://www.epa.gov/region8/qa>" ] ). [this link no longer works and I haven't found a new link that is comparable]